

WHAT IS CLAIMED IS:

1. An optical connector for use with an electro-optical board, the optical connector comprising:

a right angle interface body having one or more first optical paths and one or more second optical paths, each of the first optical paths corresponding to a respective second optical path, wherein the first optical paths are disposed in a first plane and the one or more second optical paths are disposed in a second plane, the first and second planes being substantially at right angles with respect to one another;

a female self-alignment body having a tapered channel substantially aligned with the first plane; and

a tapered male self-alignment body sized to fit closely into the tapered channel of the female self-alignment body, and having one or more third optical paths adapted to align with the first optical paths when the tapered male self-alignment body is engaged with the female self-alignment body;

wherein the third optical paths are adapted for connection to one or more optical fibers disposed outside the electro-optical board, and

wherein the second optical paths are adapted for connection to optical fibers embedded in the electro-optical board.

2. The optical connector of claim 1, further comprising:

an anchor body adapted to securely engage an exterior surface of the female self-alignment body and adapted to anchor to a surface of the electro-optical board.

3. A method of integrating into an optical-electrical board an optical connector that includes a right angle interface body, a female self-alignment body having a tapered channel, and an anchor body, the method comprising:

connecting a right angle interface body to a set of one or more optical fibers;

embedding the right angle interface body and the one or more optical fibers inside the optical-electrical board;

forming a hole in the optical-electrical board to expose an upper surface of the embedded right angle interface body;

securely fastening the anchor body about the hole; and

inserting the female self-alignment body through the anchor body and the hole so as to bring the tapered channel into registration with the embedded right angle interface body.

4. The method of claim 3, wherein the one or more optical fibers comprise a fiber management system.

5. An electro-optical back plane comprising:

- a fiber management system formed of plural optical fibers;
- an electrical bus circuit;
- a board, wherein the fiber management system and the electrical bus circuit are embedded inside the board;
- plural optical connectors disposed on the board, each of the optical connectors being coupled to one or more of the plural optical fibers of the fiber management system; and
- plural electrical connectors disposed on the board, each of the electrical connectors being electrically connected to the electrical bus circuit;
- wherein each of the optical connectors comprises:
- a right angle interface body embedded into the board for connection to one or more fibers of the fiber management system;
- an anchor body securely fastened to the surface of the board; and
- a female self-alignment body having a tapered channel, wherein the female self-alignment body is held by the anchor body so that the tapered channel is in registration with an upper surface of the right angle interface body.